034401

8/7/78 (9)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

SUBJECT: Ecological Effects Branch comments on Florida's 24C registration for Dibrom aerial thermal Fogging

DATE: August 7, 1978

FROM: Fred Betz FB
Ecological Effects Branch, HED

TO: Pat Critchlow, Special Registrations

The Environmental Safety Section has twice reviewed data pertaining to the amendment of Florida's 24C registration of Dibrom to include its use as an aerial thermal fog against adult mosquitoes. Recently, Pat Critchlow, Special Registrations, provided the section with some additional data submitted by Chevron Chemical Company and requested that the Environmental Safety and Efficacy reviewers try to develop an alternate label that would allow the use of Dibrom thermal Fog in at least some limited areas.

The purpose of this memorandum is to suggest alternative label statements that would allow Dibrom thermal fogging in limited areas. Second, several comments are presented concerning the hazards associated with the use of Dibrom as a mosquito adulticide in the Florida Keys. These comments are based upon information provided by the Special Registrations Section, a review of selected literature (field monitoring studies) and telephone conversations with researchers and mosquito abatement district personnel.

Comments and suggestions are listed below:

(1) Several aspects of the proposed and existing label are contradictory.

a. Use sites for adult mosquito control include Tidal Marshes and Swamps but a precautionary label statement reads "Application of this product to any body of water is prohibited."

b. The label states that application should be made "when wind is 5 mph or less", however Chevron Chemical Company indicates that in the Florida Keys, there is more or less a constant breeze and this is used to drift the thermal fog onto the desired target area.

(2) Personal communication with certain individuals in Monroe County led this reviewer to suspect that Dibrom is already being applied as a thermal fog. A photograph of such an operation appeared in a Key West newspaper on June 29, 1978, although the chemical in use cannot be positively identified.

(3) A problem with possible exposure of a threatened species, Schaus swallowtail, has been identified. This species enhabits areas likely to be sprayed and could be susceptable in either its adult or larval form.

(4) Results of five aquatic field studies designed to assess effects on non-target species were evaluated. No unreasonable adverse effects were observed in the studies, however none of the studies were completely adequate.

(5) No fish or wildlife incidents (accidents, kills, etc.) have been reported. One livestock incident and a kill of invertebrates being cultured and raised for sale has been reported. A request has been made of Mr. Frank Davido (Benefits and Field Studies Division) for an update from the Pesticide Incident Monitoring System and for details of the livestock incident.

(6) Under most conditions, drift into non-target areas is more of a problem with a thermal fog than ULV. However, since both formulations are likely to drift, contamination (in terms of toxicant/unit area) will be greater with a ULV than thermal fog.

(7) It is the opinion of EEB that certain hazards exist with the use of either thermal fog or ULV and to date, there are insufficient data to conclusively show which formulation is the least hazardous. Therefore, we do not concur with the assertion of Chevron Chemical Co. that the thermal fog application is safer than ULV.

(8) Finally, it is the opinion of EEB that Dibrom can be applied as a thermal fog to the following sites (with the exception noted below) without posing unreasonable adverse effects to the environment:

Residential Areas
Municipalities
Woodlands
Livestock Pastures
Feed lots
Pastures including dairy cattle

Exception:

The threatened species - Schaus swallowtail (Papilio aristodemus ponceanus) - occurs in northern Key Largo, Upper and Lower Matecumbe Key, Elliot Key, Old Rhodes Key and Lignolitti Key (anverified). Therefore, Dibrom should not be applied to Woodlands, Livestock Pastures and Feedlots on these islands in order to avoid pesticide exposure.

Summary of Findings from Aquatic Field Studies

Five aquatic field studies have been conducted using a variety of application techniques, formulations and rates (0.064 to 0.28 lb. Dibrom/A). None of the studies report catastrophic adverse effects on non-target fish and wildlife. Two studies monitored fish cholinesterase. Levels were depressed in one study but elevated in another. The only kills of aquatic fauna were four small blue crab in one study and juvenile shrimp held in dishes in another study. Several studies reported kills of non-target terrestrial invertebrates including dragonflies. Results of two studies confirm that aerially applied Dibrom can drift at least 0.25 miles from the site of application.

Collectively, the five field studies suggest that the aerial application of Dibrom to aquatic habitat does not produce unreasonable adverse effects on a non-target aquatic fauna. However, none of the studies conducted thus-far adequately simulated the method, rate and site of application proposed by the state of Florida, and most did not adequately assess effects on the non-target fauna most likely to be impacted (ie. shrimp and crab -- particularly larval and juvenile stages).

Summary of Use History Information

Several sources were checked for information concerning the use history (fish kills, accidents, etc.) of Dibrom. The EPA Pesticide Incident Monitoring System accident file reported no episodes involving fish and wildlife and one episode involving livestock (details unknown).

A former employee of the Monroe County Mosquito Control District (Mr. Donald Payne, Asst. Director, Jefferson Parrish, M.A.D.) stated that Dibrom thermal fog will drift farther than ULV, but that there will be less fallout per unit area, thus reducing the hazard to exposed non-target aquatic fauna. He further stated that use of ULV will hasten the buildup of resistant mosquito strains due to increased exposure of larvae. Regarding accident history, Payne had heard of some problems in Florida with ULV but not thermal fog applications. The Florida Department of Environmental Resources (Dr. Goforth) reports no accidents with the use of Dibrom.

A small mariculture firm on Plantation Key (Dr. Paul Tuskas) reports that their outdoor culture tanks have been sprayed twice with Dibrom Thermal Fogs. The effect each time was to kill or cripple the majority of their culture organisms so that tanks had to be drained, cleaned and refilled. Unfortunately, water samples from the culture tanks were not analyzed, so the presence of Dibrom was not proven, Dr. Tuskas indicated that the spray applications he has witnessed appear to be thermal fog applications with DC-3 aircraft. He has photos to verify this.

Endangered Species Considerations

Three endangered species, the Key Deer, Southern Bald Eagle, Brown Pelican and Schaus Swallowtail (threatened) were considered the most likely to be exposed to Dibrom in Monroe County. Based upon habitat preference and food habits, the Bald Eagle and Brown Pelican were not considered likely to be adversely affected. Telephone conversations with fish and wildlife personnel in Florida confirm this conclusion. The Key Deer could be exposed directly and through its diet, however since the label indicates that

livestock in pastures to be treated need not be removed, Dibrom is apparently safe to large mammals when applied as directed (note one accident involving livestock was reported). Mr. John Oberheu (U.S. Fish and Wildlife Area Office, Jacksonville, Florida) indicated there was no record of pesticide related incidents involving the Key Deer.

The threatened Schaus swallowtail (Papilio aristodemus ponceanus) may be adversely effected by applications of Dibrom as a mosquito adulticide. Within Monroe County, this species occurs in northern Key Largo, Upper and Lower Matecumbe Key, Elliott Key, Old Rhodes Key and Lignolitti Key (unverified). Schaus swallowtail breeds in the hammock areas which contain numerous potholes that are likely sites for mosquito control operations. Eggs are laid on, and larvae feed specifically on, the torchwood tree (pers. comm. Dr. Charles Covell, U. Louisville) which is found in clearings and along open paths and trails. Both Dr. Covell and Dr. Howard Weems (Div. Plant Industry, Gainesville, Florida) expressed the personal opinion that pesticides have had an adverse impact on Shaus swallowtail. Dr. Weems indicated that the first adulticiding operations in the Keys in the 1940's had a drastic adverse effect on the insect fauna.

Conceivably, Schaus swallowtail could be exposed to Dibrom in either its larval or adult life stage (adults are not migratory according to Dr. Weems). Dibrom is labeled for use to control a wide spectrum (species) of larval insect forms as well as adult dipterans. Several orders of adult non-target insects have been reported killed by aerial applications for mosquito control. One of the reasons proposed for using a thermal fog over a ULV formulation is that better penetrations of vegetation can be achieved. This would seem to pose increased hazards to adult forms via contact toxicity while ULV application may result in higher residues on foliage which could pose increased hazards to the larval stages feeding on vegetation.

TEST: Aquatic Field Study

SPECIES: Water Strider (Gerris buenoi)

RESULTS:

AUTHOR ABSTRACT: Wild-caught Aedes mosquitoes and water striders (Gerris buenoi) were exposed in cages to low-volume fogs of malathion and naled. The cages were arrayed at two levels--on the ground and 6 feet above ground--from 100 feet to 500 feet from point of discharge. Mortality was consistently high at 100 feet for both insecticides when the cages were placed 6 feet above ground, but beyond that point mortality decreased in relation to increasing distrance from point of discharge and in relation to the height and density of ground cover between each cage and the point of discharge. Malathion non-thermal fog and naled thermal fog penetrated dense ground cover much more readily and with greater insecticidal effect than naled non-thermal fog. In those cases where the fog readily reached the cages, naled produced a much higher percentage of knockdown (1-hour postspray) of both mosquitoes and water striders. Water striders were more susceptible to naled (40-61% mortality) than to malathion (13-21%). Malathion and naled as nonthermal fogs were both effective against adult mosquitoes, but malathion would be preferable where the target areas includes dense underbrush and aquatic habitats.

CHEMICAL: Dibrom 14 concentrate (?)

TITLE: Malathion and Naled as mosquito adulticides in Alaska.

STUDY DATE: 1974

RESEARCHER: J.R. Gorham (Mosquito News, 34(3):286-290)

REGISTRANT: Chevron Chemical Company

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: Study provides useful information but does not address any specific data requirements.

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TEST: Fish and Aquatic Invertebrate Acute Bioassay

SPECIES: Golden Shiner - (Notemigonus crysoleucas)
Stone Fly - (Hydroperla crosbyi)
Mellgrammite - (Corydalus cornutus)

RESULTS: (Author Abstract)

The respiratory activity of three aquatic animals, selected from different pollution index classifications, was examined in the presence of sublethal concentrations of Dibrom, a commonly used, broad spectrum, organophosphate insecticide. The oxygen consumption of Hydroperla crosbyi (Needham and Claassen), Corydalus cornutus L. and Notemigonus crysoleucas (mitchell) was measured in a specially designed flowing-water respirometer, housed in an environmental chamber.

The acute toxicity of Dibrom, measured as 24-hr LC_{50}'s for these animals, was compared in both static and flowing-water bioassays and found to be significantly more toxic to both the hellgrammites and stoneflies in the flowing system (LC_{50}: 6.8 ppm and 11.4 ppb, respectively) than in the static bioassay (LC_{50}: 9.5 ppm and 16.0 ppb, respectively). There was a marked difference in the toxicity of Dibrom to golden shiners between flowing and static systems but this was not statistically significant at the 95% confidence level.

Sublethal Dibrom concentrations significantly affected oxygen consumption (QO_2) in all test animals, and reduced their tolerance to low oxygen tensions. The ability of the golden shiner to tolerate low oxygen tensions was reduced by 50% by exposure to 5 ppm Dibrom concentrations. Stonefly body undulations and hellgrammite gill beats were increased by exposure to sublethal toxicant levels in the flowing system.

SUMMARY OF TOXICITY DATA:

24-hr Dibrom LC50[a]

Organism	Static	Number of animals tested	Flowing	Number of animals tested
Corydalus cornutus	9.50 ppm (10.07-8.93)	75	6.8 ppm (8.16-5.44)	65
Hydroperla crosbyi	16.00 ppb (17.28-14.72)	150	11.4 ppb (12.54-10.26)	105
Notemigonus crysoleucas	6.5 ppm (7.08-5.92)	100	6.1 ppm (6.35-5.85)	41

[a]Figues in parentheses are confidence limits of the LC50 for p = 0.05.

CHEMICAL: Dibrom - 8 - emulsive.

TITLE: The effects of Dibrom on Respiratory activity of the Stonefly, Hydroperla crosbyi, Mellgrammite Corydalus cornutus and the Golden Shiner Notemigonus crysoleucas.

STUDY DATE: 1973 (Trans. Am. Fish. Soc. No. 4 806-815)

RESEARCHER: A.W. Maki, K.W. Stewart and J.K.G. Silvey.

REGISTRANT: Chevron Chemical Co.

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: Study cannot be upgraded because ~~test materials was not technical grade and~~ test duration was only 24 hours.

TEST: Aquatic Field Study

SPECIES: Killifish (Fundulus sp.)
Snook (Centropornus undecimalis)
Mangrove Snapper (Lutjanus griseus)
Cotton Rat
Black Rat

Additional fish and wildlife species (including terrestrial and aquatic invertebrates) were observed.

RESULTS:

Dibrom was applied aerialy at a rate of 0.06 pounds Dibrom per acre (ULV). Post-treatment observations made immediately after application revealed many dead dipterans (adults) but birds and small minnows appeared normal. The authors noted that blue crabs would be expected to scavage any dead or dying fish and that the tide would also remove dead fish and other aquatic organisms. Dead and dying grasshoppers, dragonflies and other terrestrial insects were observed the day following application. Four fingernail size blue crabs were found dead at the side of a shallow pool. Further observations and seine haul revealed no additional dead organisms. No change in bird activity was noted. A little blue heron was found dead but cause of death could not be determined. Pre- and Post-treatment collections of the species listed above were analyzed for cholinesterase and all samples showed a slight increase of cholinesterase. The reason for this unexpected response is unknown but the author suggested that the very low dosage of Dibrom could have stimulated a physiological response to the chemicals that resulted in an overcompensation.

CHEMICAL: Dibrom 14 concentrate

TITLE: Special Report: Pesticide Field Appraisal - Field observations on the effects of ultra-low volume application of Dibrom on the fish and wildlife in South Florida.

STUDY DATE: Observation Period - November 20-26, 1966
Date of Report - May 1967

RESEARCHER: Chevron Chemical Co. and U.S. Air Force

REGISTRANT: Chevron Chemical Co.

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY - This study provides useful information but cannot be upgraded because - other than the cholinesterase analyses - all conclusions are based upon qualitative observations made after the spray application. In addition, the method of application was ULV at 0.06 pounds/A rather than a thermal fog at 0.081 pounds/A as proposed in subject registration.

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TEST: Aquatic Field Study

SPECIES: Blue Crab - Callinectes sapidus
Fiddler Crab - Uca pugnax
Grass Shrimp - Palaemoneks sp.
Shrimp - Penaeus sp.
Sheepshead Minnow - Cypinidon variegatus
Longnose Killifish - Fundulus sinilis

RESULTS: Dibrom was sprayed aerially at 0.063 lb. ai/A upwind of a salt marsh and allowed to drift over the area. Non-target test organisms held in cages suffered no mortality during the period of observation (48 hours) while caged stable flies (target) were reduced 70-100%.

CHEMICAL: Dibrom (25% by volume in soybean oil).

TITLE: Effects of Dibrom applied as Aerial Sprays on Non-Target Marsh Organisms in Northwest Florida

STUDY DATE: 1976

RESEARCHERS: P.G. Hester, B.W. Clements, Jr., J.C. Rulos and W.N. Swenson

REGISTRANT: Chevron

VALIDATION CATEGORY: Supplemental

CATEGORY REPAIRABILITY: The study provides some useful information but cannot be upgraded because a lower rate and different formulation were used. Also, the material was not applied directly to a marsh area and no chemical analysis was made to determine how much material reached the marsh area. Details of protocol, such as number of test organisms and number and location of test cages were also lacking.

ADDITIONAL INFORMATION:

Methodology - Caged test animals were juvenile or adult forms - no larvae were examined. A 25% formulation of Dibrom was applied at .063 lb. ai/A in a manner so that the material would drift over the salt marsh area under study. The application was made so that the sampling stations were 800, 1200 and 1600 feet downwind of the nearest spray swath. Caged animals were counted at 1, 24 and 48 hours post treatment.

Samples were taken in upper, middle and lower marsh regions where salinity ranged from 29.6-30.8 ppt, and average water depth was 1, 3 and 10.5", respectively. Average wind speed was 7.5 m/h.

Additional Results

"Thousands" of fiddler crabs were observed feeding on the open marsh flats and showed no ill effects. The only adverse effects observed was several dead tiger beetles.

Reviewer Comments

This study employed a lower use rate (0.063 vs 0.087 lbs. ai./A) and different formulation than is proposed in this registration. In addition, the material was applied from 800 to 1000 feet upwind of the marsh test sites, thus there was no direct application to the test organisms. Chevron has indicated that the thermal fog would be used over mangrove marshes, thus allowing for direct application to estuarine organisms. Therefore, the major drawback of this study is that it did not adequately similate the proposed operational use.

TEST: Aquatic Field Study

SPECIES: Brown shrimp (postlarvae + juvenile) - Penaeus aztecus
White shrimp (postlarvae + juvenile) - Penaeus setiferus
Grass shrimp (adults) - Palaemonetes pugio
Blue crab (juveniles) - Callinectes sapiders
Killifish (adults) - Fundulus heteroclitus
Spot (postlarvae) - Leiostomus xanthurus

RESULTS:

A. Full Scale Thermal Fogging Tests - Two tests were conducted during 1965-67 in South Carolina. Applications were made by ground equipment to marsh areas containing cages of brown shrimp, grass shrimp and spot. Cages were examined at 1,4,24 and 48 hours post-treatment. Mortalities among both control and experimental groups were very low (<10%) and the only losses were attributed to handling or to accidents.

B. Small Scale Fogging Test - Postlarval and juvenile white shrimp were exposed to a ground spray of Dibrom-Fuel Oil (1oz. Dibrom 14 Cove per 1 gal. no. 2 fuel oil) in a marsh bordering a tidal creek. One nylon mesh cage and one glass specimen dish were used to contain the experimental and control animals - cages were placed in six inches of water and the dishes were placed just above water level. The area was heavily fogged for 2-3 minutes on high flood tide. Specimens held in the glass dish suffered 100% mortality within 2 hours whereas those in the cages were unaffected up to four hours post spray. After 4 hours, the cages were removed to laboratory tanks and observed for an additional 20 hours. No toxicant related mortalities were observed. It was concluded that under confined conditions, Dibrom-Fuel Oil is lethal to post-larval shrimp.

C. Aerial Application Field Test

Four tests were conducted, two at high tide and two at low tide at rates of one and two fluid ounces ai/A (0.06-0.12 lbs. ai/A). Postlarval brown shrimp, white shrimp, killifish and blue crab were placed in nylon mesh cages in 1-3 feet of water. Test and control animals were left in the treated water for approximately 1 hour after spraying and then removed to remote holding sites for 48 hours. Test animal mortality was 5.4%, control mortality was 10%.

Chemical - Dibrom 14 Concentrate

Title - Field Tests Concerning the Effects of "Dibrom 14 Concentrate" (Naled) on Estuarine Animals

Study Date - June 1967

Reseracher - Charles M. Bearden

Registrant - Chevron Chemical Co.

Validation Category - Supplemental

Category Repairability - The study provides useful information but cannot be upgraded. The major downfall of this study is that test animals were removed from the test water within 1 to 4 hours after spray application.

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TEST: Aquatic Field Study

SPECIES: Catfish (species unknown), plus numerous species of fish, aquatic invertebrates and reptiles observed or collected on site.

RESULTS:

Dibrom was applied by air in a ULV formulation at 0.64 and 1.28 fl. oz. ai/A to a swampy area containing numerous temorary and permanent pools of water (Georgia). Caged catfish in the control and one test area suffered 50 and 25% mortality, respectively but this was not attributed to treatment effects. Survival of caged catfish at four other sampling locations ranged from 90-100% 48 hours after application. AChe activity in catfish brains was significantly lower ($p=.05$) in the control and 1.28 oz. lA areas compared to pre-treatment. There was no statistical difference between the 0.64 oz./A area and pretreatment AChe activity. Sampling for aquatic invertebrates revealed no treatment related effects. A few dead carpenter bees and dragonflies were collected by drop trap. Post-treatment observations revealed nothing abnormal. Contamination of the control area by naled occurred, as indicated by spray drop cards and depression of AChe activity in control fish.

Chemical: Dibrom 14 Concentrate.

Title: The effect of ULV aerial dispersal of Naled on an aquatic habitat.

STUDY DATE: Application date - July 31, 1974
Report date - October 1974

RESEARCHER: J.M. Livingston and
J.T. Goodwin, U.S. Air Force

REGISTRANT: Chevron Chemical Company

Validation Category: Supplemental

Category Repairability - This study cannot be upgraded to core. The caged fish information is useful, but due to high mortality in the controls and contamination of the control area by Dibrom, the data cannot be considered core.

Additional Information

Mean AChe activity in Fish Brains (ΔpH/hr.):

Pretreatment	Control	Low Rate	High Rate
.71a	.60b	.66 ab	.57b

(numbers followed by the same letter are not significantly different at p = .05).

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Dibrom 14

85% Naled

Larry Turner June 2, 1978

Field study
various non-target organisms
occurring in salt marshes

ES-BB1

Lesser, Cyrus R. 1977. The effect of Naled on selected species of salt marsh organisms. 7 p. Study conducted by the Maryland Department of Agriculture. Submitted by Chevron Chemical Company; Reg. #239-1281 and 239-1721; Acc #232296, 11/21/77.

RESULTS: Mortality to non-target organisms following a single application of Dibrom 14 to a salt marsh habitat is given in the table below along with mortality in an untreated control plot. Mortality is given in percent for 48 hours following treatment.

Organism	#exposed		%Mortality	
	treated	control	treated area	control area
Eastern oyster (Crassostrea virginica)	95	100	0	0
hooked mussel (Brachiodontes recurvus)	24	27	4.2	3.7
salt marsh snail (Melampus bidentatus	68	40	0	0
salt marsh periwinkle (Littorina irrorata)	49	46	0	0
red-jointed fiddler crab (Uca minax)	14	20	0	0
blue crab (Callinectes spidus)	6[a] 2[b]	6[a] 2[b]	50[a] 0[b]	33.3[a] 0[b]
grass shrimp (Palaemonetes pugio)	1[c]	50	0	—[d]
spot (Leiostomus xanthurus)	25	21	0	9.5

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Organism	#exposed treated	#exposed control	%Mortality treated area	%Mortality control area
salt marsh killifish (Fundulus heteroclitus)	7	0	0	9.5
Mallard (Anas platyrhynchos)	9	11	88.9	100

(a) Crabs brought from a local "soft crab house" and undergoing molt.

(b) "Hard crabs" obtained on the test site.

(c) Originally 25 shrimp were caged, but 24 escaped from the holding cage.

(d) All 50 caged shrimp died before treatment.

Investigator concluded that mortality due to Naled was negligible, and that total mortality was less than normal for field conditions. High mortality to blue crabs and mallards was not attributed to Naled because high mortality occurred also on the control plot. Mallard mortality was attributed to a severe thunderstorm the night after application; blue crab mortality was attributed to the general sensitivity of this species while moulting.

VALIDATION CATEGORY: Supplemental in general, but invalid with respect to conclusions about mallards, blue crab and grass shrimp.

CATEGORY RATIONALE: Mallard and blue crab portions were invalid due to very high control mortality. Grass shrimp portion was invalid because only one caged individual was exposed to treatment.

ABSTRACT: This field study was conducted on the Deal Island Wildlife Management Area in Somerset County, Md., in a tidal marsh and its adjacent upland. Dibrom 14 was applied undiluted to 650 acres at a rate of 1 fluid ounce (0.109 pounds a.i.) per acre. Application was made by aircraft in late morning at a temperature of

27°C and windspeed of 8 mph, and when tide was low at slack water. A control area of unspecified size was located about 2 miles south of the treatment area.

Ten non-target species (see "Results" section for specific identification) were obtained about 24 hours prior to application. Except for the soft crabs purchased locally and the mallards obtained from the Maryland Wildlife Administration, all organisms were collected near the test pilot. Organisms were placed in holding cages by species which were then placed in appropriate habitats for each species. Mortality checks were made one hour before and 24 and 48 hours after application.

COMMENTS: This report appears to have been based on a hastily conceived and conducted study, although it does provide some supplemental information. Possibly this perception is due to incomplete reporting, such as:

1. Control site was undescribed in terms of habitat, size, and other treatment, if any.

2. Cages and species test sites were undescribed.

In addition control mortality of blue crabs and mallards, and the escape and loss of grass shrimp implies less than very good procedures.

In favor of the study, the following were noted:

1. Mortality for most organisms was low or zero.

2. Organisms tests appear to be a reasonable cross section of animals occurring there, with the exception that no annelids were tested.

In general this study appears to meet the classification criteria of supplemental. That is, it was not as good a project as we would like to see, but it is indicative to some extent of the probable impact on some non-target animals. The value of this study has been considered only in relation to the use of Dibrom 14 as a cuculicide in salt marshes at the tested rate. The value for other use patterns will have to be determined accordingly.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: August 16, 1978

SUBJECT: Acquisition of Information from P.I.M.S.

FROM: Fred Betz, Environmental Saftey Section I, H.E.D.

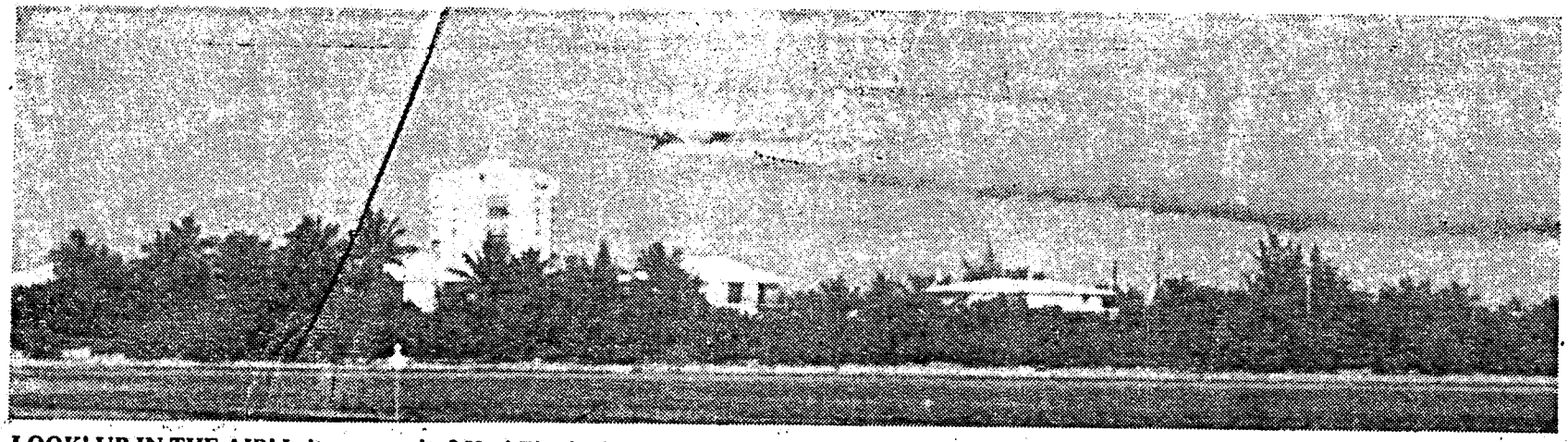
TO: Frank Davido, Ecological Effects Monitoring Branch

As per our telephone conversation of August 14, I would like to request the following information from P.I.M.S. :

- Accident history of Naled (1,2 dibromo- 2,2 dichloroethyl dimethyl phosphate). Specifically . I would like to know (1) if there have been any additional episodes reported since my request for information on June 1977 and (2) the details of the livestock episode that P.IM.S. identified in their report of June 1977.

This information is requested to support the review of a 24(c) registration. I would to receive this onforation by 11 September.

EPA FORM 1320-6 (REV 3-76)



LOOK! UP IN THE AIR! Is it a mosquito? Yes! That's the reason the spray planes from the Monroe County Mosquito Dist. have been making so many sorties lately. This one is over Key Colony Beach and it is not unlikely that beneath all that stream of fog are several dozen outdoor chefs throwing themselves across their $5-a-pound steaks until the whole thing blows over. In closing, this month's issue of Scientific America magazine points out that a hungry mosquito can drink some 2.8 milligrams of blood. Keep'em flying fellows!

Keynoter photo by RON McINTOSH

FLORIDA KEYS
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REPORT OF TELEPHONE CALL OR VISITOR

✓ TELEPHONE | PROFESSIONAL

NAME OF CALLER OR VISITOR

Mr. Mike McMaster
Ocean Farming Systems, Inc.
Plantation Key, Florida

NATURE OF CONVERSATION

NOTE: Explain this space if applicable.

DATE: SEPTEMBER 11, 1978

TIME OF CALL: 9:30

PHONE NO. (INCLUDE AREA CODE): 305/852-3624

REGISTRATION NO. OR PESTICIDE SYMBOL

DATE OF TEST SUBMISSION

Mr. McMaster called to check on the status of the the state registration (24c) of Naled for aerial thermal fogging. (Mr. McMaster is president of Ocean Farming Systems, a small company which raises brine shrimp on a commercial basis. Mc Master contends that the county has twice sprayed his mariculture operation by Dibrom aerial thermal fog and caused extensive damage to his brine shrimp. They have sued the county but lost the case.)

Mr. Mc Master stated that the county recently sprayed the area but suspended spraying while over Ocean Farming property. He was still concerned about contamination via drift and took water samples to analyze for Naled.

Because McMaster has been unable to receive compensation for his loss through the court, he indicated that he has contacted his Congressman for assistance. He requested that I provide him with a contact within EPA with whom his Congressman can correspond.

In response to Mr. Mc Master's questions I indicated

Fred Betz

REFERRED TO (Name)

PREVIOUS EDITIONS (8-72) REPLACES PR FORM 1.5 WHICH MAY BE USED UNTIL EXHAUSTED.

that I had completed my review, but I did not state my conclusions or recommendations. I told Mr. McMaster that I would check on the status of the registration and find out who the appropriate contact would be for the Congressman.

Later, I called Mr. McMaster and indicated that he should contact Ms. Pat Critchlow, Special Registrations (755-2516) to inquire about the status of the registration. I also indicated that Ms. Critchlow would be the appropriate contact for the Congressman.